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(54) **CONTACT INFORMATION SYNCHRONIZATION SYSTEM AND METHOD**

(71) Applicant: **TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED**, Shenzhen (CN)

(72) Inventors: **Shuangquan Yu**, Shenzhen (CN); **Guanghai Wen**, Shenzhen (CN); **Haoyu Xiao**, Shenzhen (CN); **Baohua Wang**, Shenzhen (CN)

(73) Assignee: **TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED**, Shenzhen (CN)

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(22) Filed: **Dec. 11, 2013**

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Oct. 21, 2011 (CN) 2011 1 0322436

(51) **Int. Cl.**
H04M 3/42 (2006.01)
H04M 1/2745 (2006.01)
(Continued)

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CPC ... ***H04M 1/274516*** (2013.01); ***G06F 17/30575*** (2013.01); ***H04M 3/4931*** (2013.01)

(58) **Field of Classification Search**
CPC H04M 1/274516; H04L 67/1095; H04L 61/1594
See application file for complete search history.

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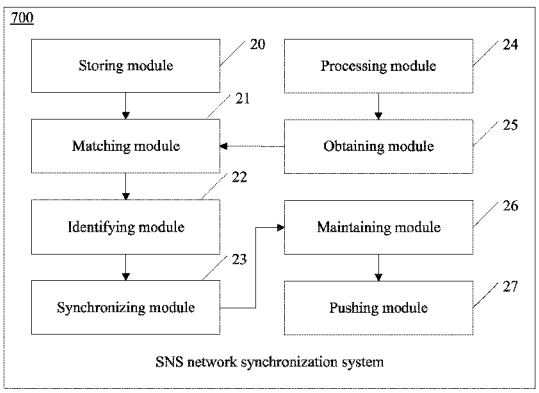
Primary Examiner — Khalid Shaheed
(74) *Attorney, Agent, or Firm* — Anova Law Group, PLLC

(57) **ABSTRACT**

A method for synchronizing between a first address book on a user terminal and a second address book on an SNS network includes determining a synchronization target and, when the synchronization target is determined as the first address book, downloading contact information from the second address book to the user terminal. The method also includes, when the synchronization target is determined as the second address book, uploading contact information from the first address book to the SNS network, and matching the contact information in the first address book against the contact information in the second address book. Further, the method includes identifying a contact person having same contact information based on the matching and synchronizing information of the contact person in the first address book and information of the contact person in the second address book.

2 Claims, 6 Drawing Sheets



(51) **Int. Cl.**
H04M 3/493 (2006.01)
G06F 17/30 (2006.01)

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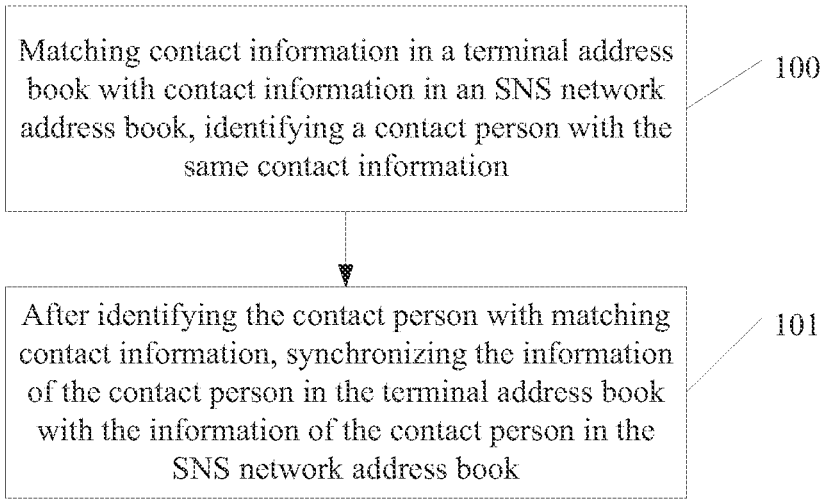
Matching contact information in a terminal address book with contact information in an SNS network address book, identifying a contact person with the same contact information
100
After identifying the contact person with matching contact information, synchronizing the information of the contact person in the terminal address book with the information of the contact person in the SNS network address book
101

FIG. 1

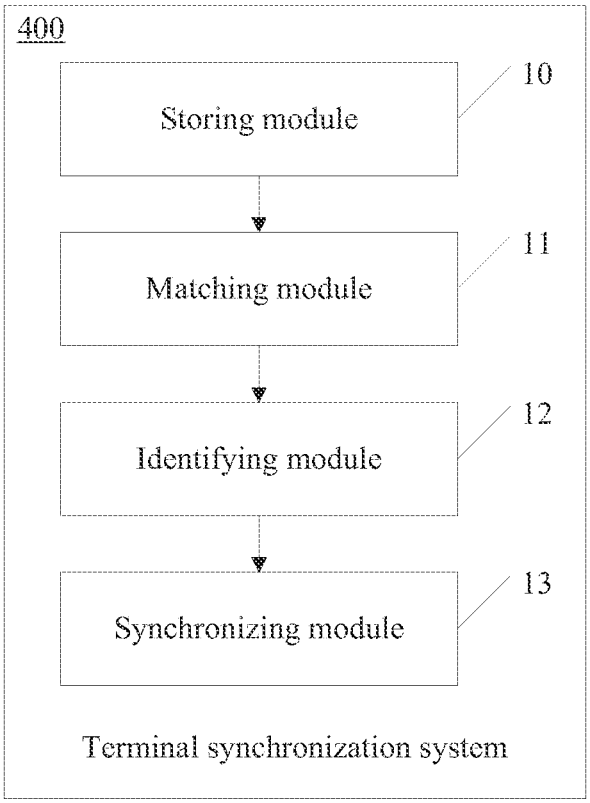
400
Storing module
10
Matching module
11
Identifying module
12
Synchronizing module
13
Terminal synchronization system

FIG. 4

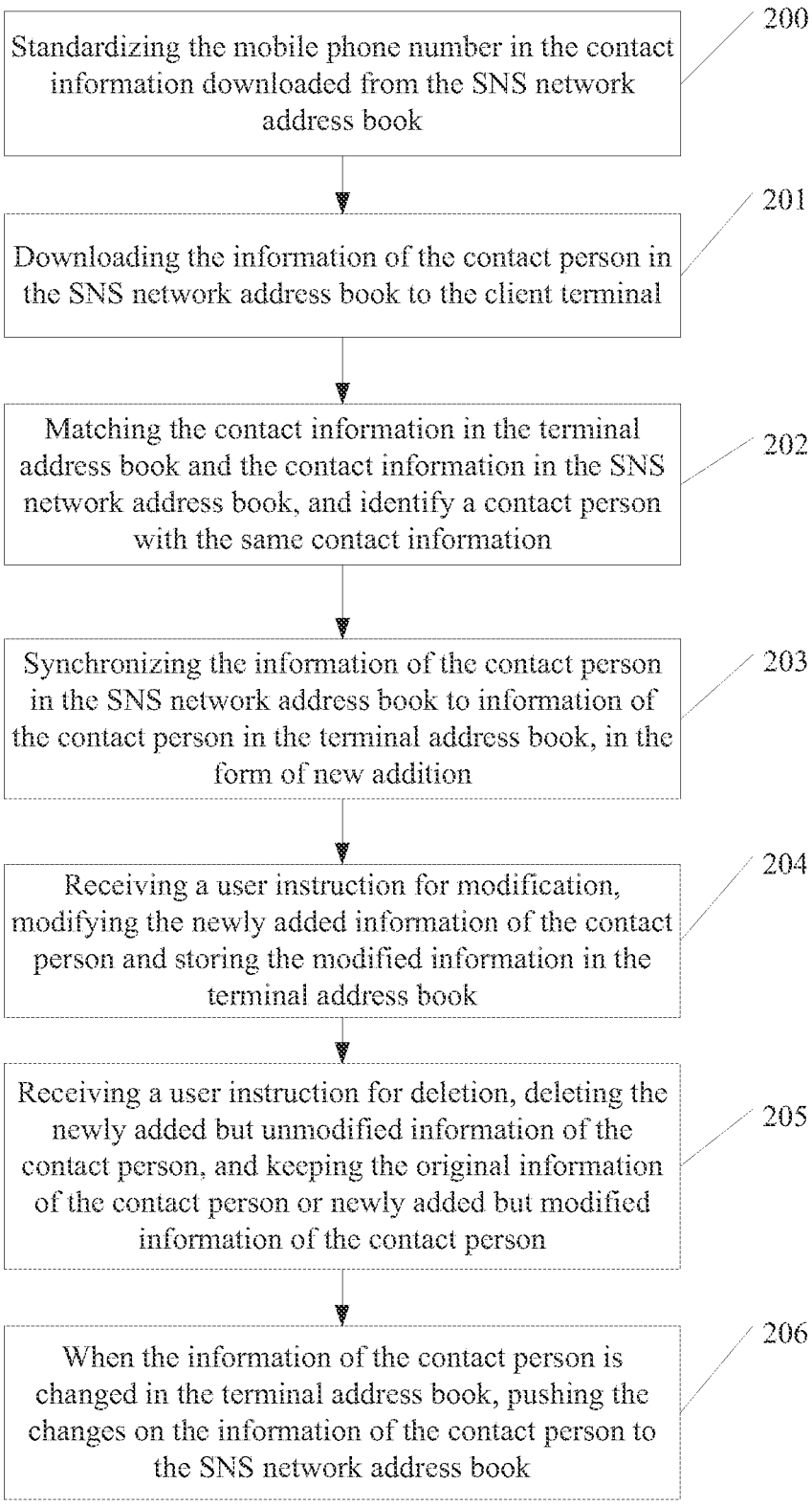
Standardizing the mobile phone number in the contact information downloaded from the SNS network address book
200
Downloading the information of the contact person in the SNS network address book to the client terminal
201
Matching the contact information in the terminal address book and the contact information in the SNS network address book, and identify a contact person with the same contact information
202
Synchronizing the information of the contact person in the SNS network address book to information of the contact person in the terminal address book, in the form of new addition
203
Receiving a user instruction for modification, modifying the newly added information of the contact person and storing the modified information in the terminal address book
204
Receiving a user instruction for deletion, deleting the newly added but unmodified information of the contact person, and keeping the original information of the contact person or newly added but modified information of the contact person
205
When the information of the contact person is changed in the terminal address book, pushing the changes on the information of the contact person to the SNS network address book
206

FIG. 2

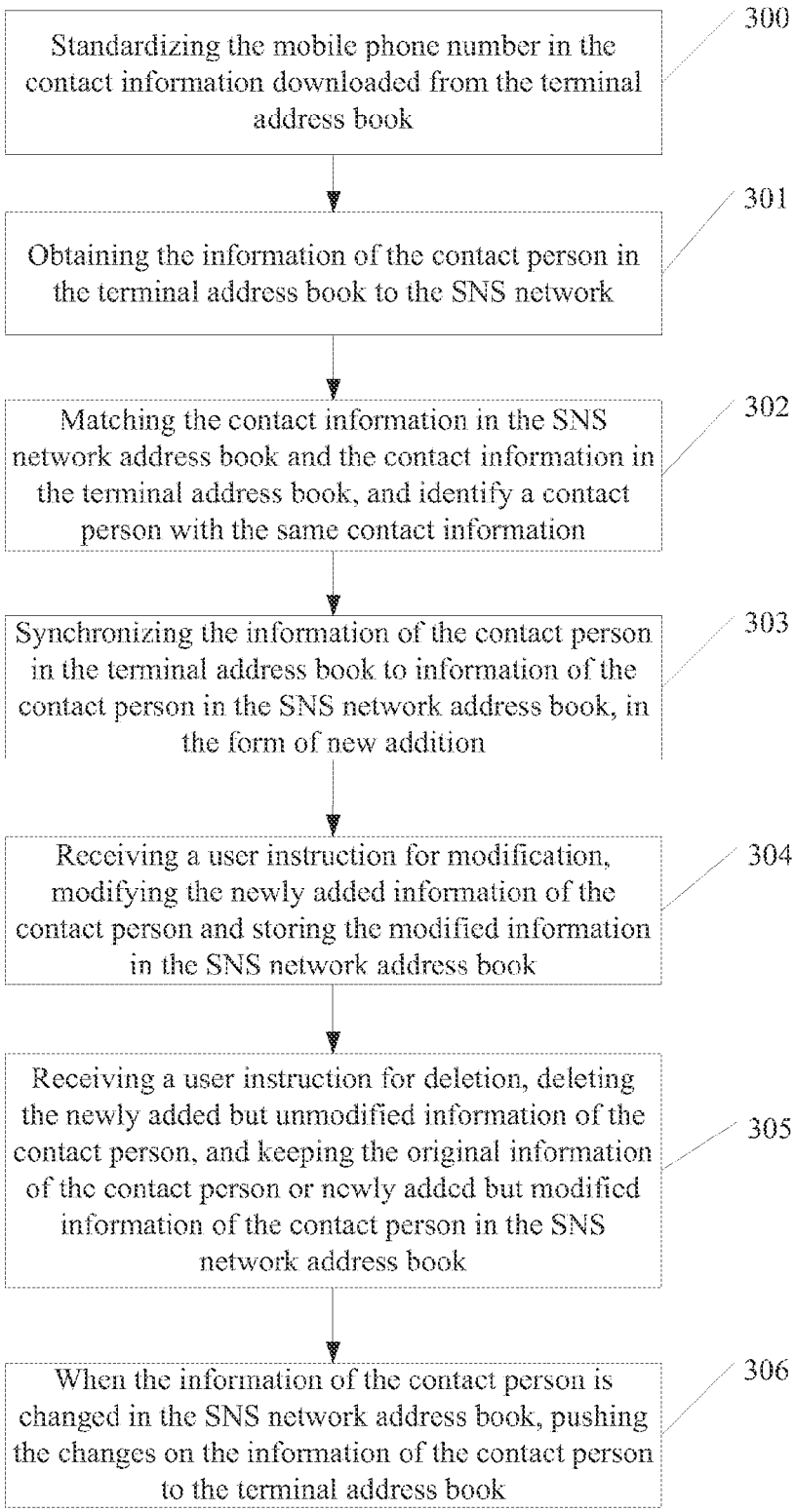
Standardizing the mobile phone number in the contact information downloaded from the terminal address book
300
Obtaining the information of the contact person in the terminal address book to the SNS network
301
Matching the contact information in the SNS network address book and the contact information in the terminal address book, and identify a contact person with the same contact information
302
Synchronizing the information of the contact person in the terminal address book to information of the contact person in the SNS network address book, in the form of new addition
303
Receiving a user instruction for modification, modifying the newly added information of the contact person and storing the modified information in the SNS network address book
304
Receiving a user instruction for deletion, deleting the newly added but unmodified information of the contact person, and keeping the original information of the contact person or newly added but modified information of the contact person in the SNS network address book
305
When the information of the contact person is changed in the SNS network address book, pushing the changes on the information of the contact person to the terminal address book
306

FIG. 3

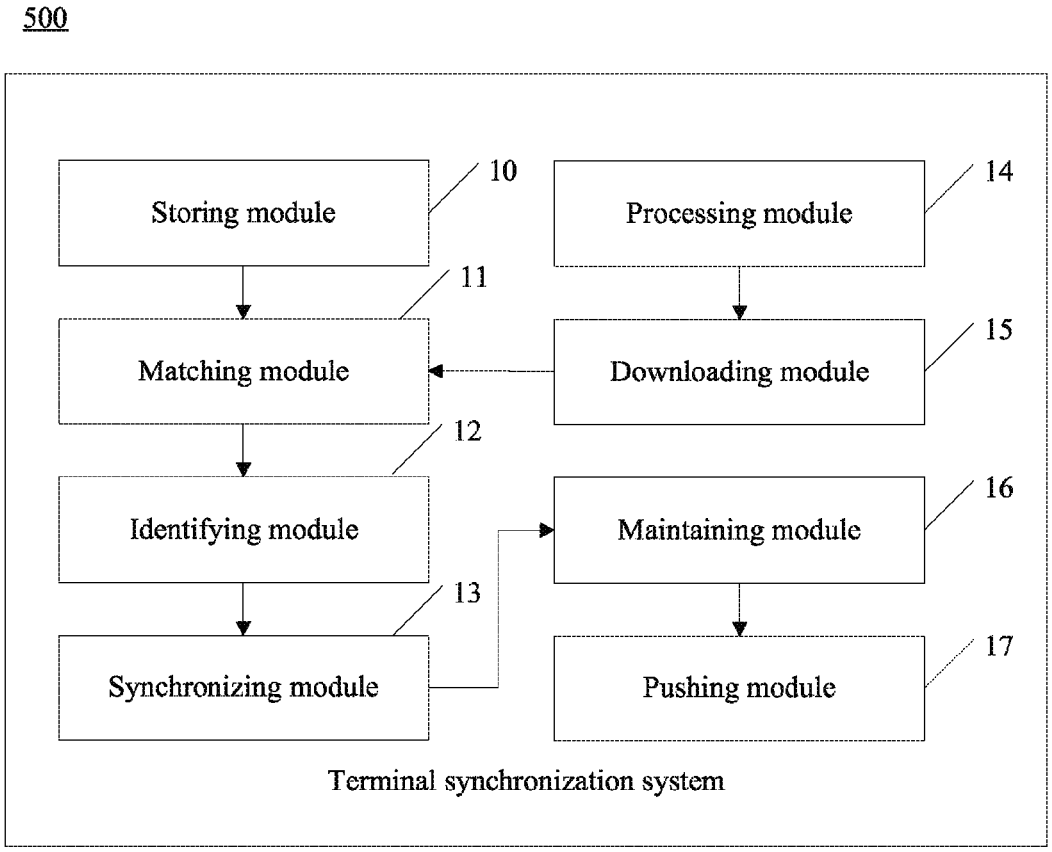
500
Storing module
10
Processing module
14
11
Matching module
Downloading module
15
12
Identifying module
Maintaining module
16
13
Synchronizing module
Pushing module
17
Terminal synchronization system

FIG. 5

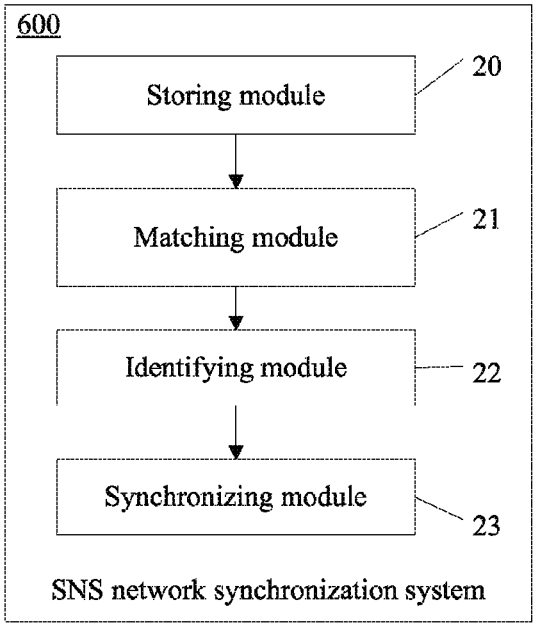
600
Storing module
20
Matching module
21
Identifying module
22
Synchronizing module
23
SNS network synchronization system

FIG. 6

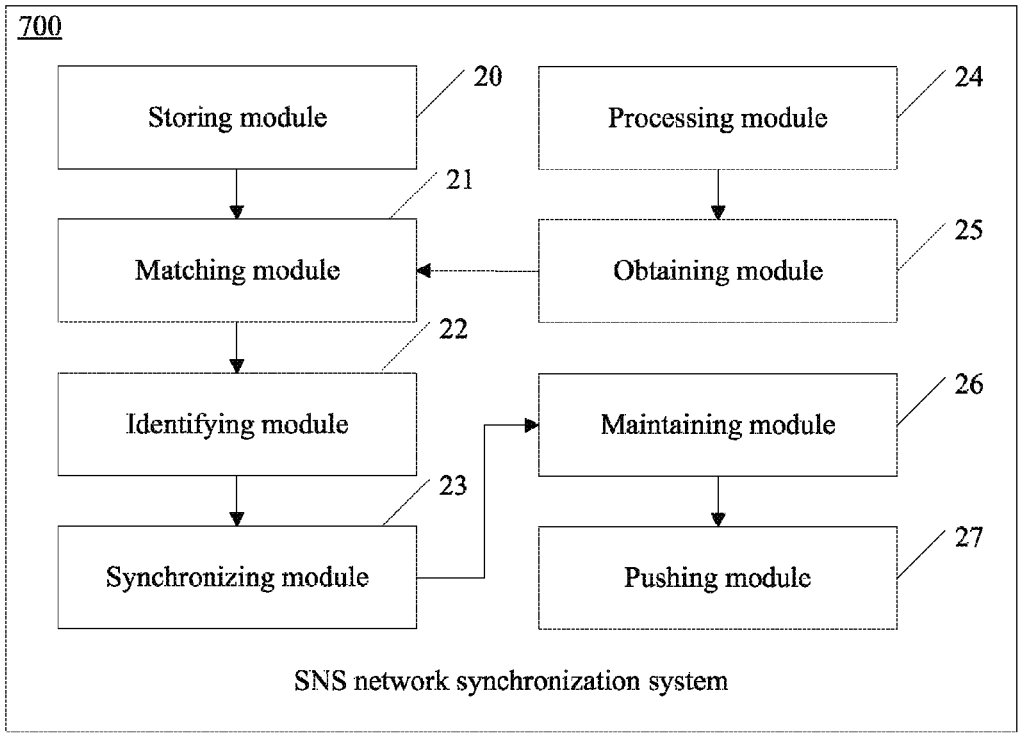
700
Storing module
20
Processing module
24
21
Matching module
Obtaining module
25
22
Identifying module
Maintaining module
26
23
Synchronizing module
Pushing module
27
SNS network synchronization system

FIG. 7

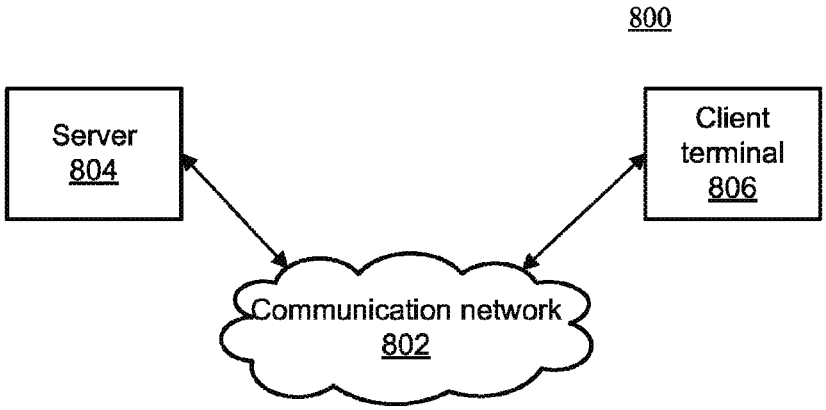
800
Server
804
Client
terminal
806
Communication network
802

FIG. 8

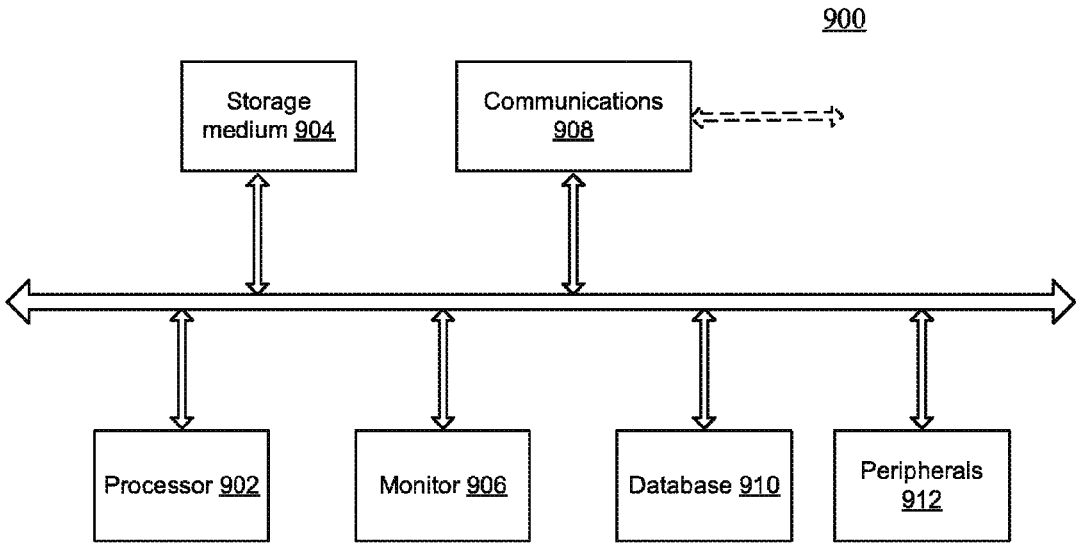
900
Storage
medium 904
Communications
908
Processor 902
Monitor 906
Database 910
Peripherals
912

FIG. 9

CONTACT INFORMATION SYNCHRONIZATION SYSTEM AND METHOD

CROSS-REFERENCES TO RELATED APPLICATIONS

This application is a continuation of PCT Patent Application No. PCT/CN2012/080511, filed on Aug. 23, 2012, which claims the priority of Chinese patent application no. 201110322436.9, filed on Oct. 21, 2011, the entire contents of all of which are incorporated herein by reference.

FIELD OF THE INVENTION

The present invention generally relates to the field of Internet technology and, more particularly, to systems and methods for information synchronization between user terminals and social network service (SNS) networks.

BACKGROUND

With rapid development on the social network services (SNS), many users of the SNS gradually formed a relationship chain in real names within the online SNS community. On the other hand, the users often also maintain address books with real names on their mobile terminals. Therefore, a user needs to separately manage an address book on the mobile terminal and an address book on the SNS network. Such separate-platform management model may have low efficiency and high management costs, and may be unable to provide desired user experience to the users.

Solutions need to be provided on how to correlate and integrate information in the address book on the mobile terminal and information in the address book on the SNS network. The disclosed methods and systems are directed to solve one or more problems set forth above and other problems.

BRIEF SUMMARY OF THE DISCLOSURE

One aspect of the present disclosure includes a method for synchronizing between a first address book on a user terminal and a second address book on an SNS network. The method includes determining a synchronization target, downloading contact information from the second address book to the user terminal when the synchronization target is determined as the first address book, and uploading contact information from the first address book to the SNS network when the synchronization target is determined as the SNS network address book. The method also includes matching contact information in the first address book against contact information in the second address book, identifying, based on the matching, a contact person having same contact information in the first address book and the second address book, and, after the contact person is identified, synchronizing information of the contact person in the first address book and information of the contact person in the second network address book.

Another aspect of the present disclosure includes a user terminal. The user terminal includes a storing module, a matching module, an identifying module, and a synchronization module. The storing module is configured to store a terminal address book, and the matching module is configured to match contact information in the terminal address book against contact information in the SNS network address book. Further, the identifying module is configured to identify a contact person having same contact information based on a matching result from the matching module, and the synchronizing module is configured to, after the contact person is identified by the identifying module, synchronize information of the contact person in the terminal address book and information of the contact person in the SNS network address book.

Another aspect of the present disclosure includes a social network service (SNS) network server. The SNS server includes a storing module, a matching module, an identifying module, and a synchronization module. The storing module is configured to store an SNS network address book, and the matching module is configured to match contact information in the SNS network address book against contact information in the terminal address book. Further, the identifying module is configured to identify a contact person having same contact information based on a matching result from the matching module. The synchronizing module is configured to, after the contact person is identified by the identifying module, synchronize information of the contact person in the SNS network address book and information of the contact person in the terminal address book.

Other aspects of the present disclosure can be understood by those skilled in the art in light of the description, the claims, and the drawings of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** illustrates an exemplary address book information synchronization process consistent with the disclosed embodiments;

FIG. **2** illustrates another exemplary address book information synchronization process consistent with the disclosed embodiments;

FIG. **3** illustrates another exemplary address book information synchronization process consistent with the disclosed embodiments;

FIG. **4** illustrates an exemplary terminal synchronization system consistent with the disclosed embodiments;

FIG. **5** illustrates another exemplary terminal synchronization system consistent with the disclosed embodiments;

FIG. **6** illustrates an exemplary SNS network synchronization system consistent with the disclosed embodiments;

FIG. **7** illustrates another exemplary SNS network synchronization system consistent with the disclosed embodiments;

FIG. **8** illustrates an exemplary environment incorporating certain embodiments of the present invention; and

FIG. **9** illustrates an exemplary computing system consistent with the disclosed embodiments.

DETAILED DESCRIPTION

Reference will now be made in detail to exemplary embodiments of the invention, which are illustrated in the accompanying drawings. Wherever possible, the same reference numbers will be used throughout the drawings to refer to the same or like parts.

FIG. **8** illustrates an exemplary environment **800** incorporating certain disclosed embodiments of the present invention. As shown in FIG. **8**, environment **800** may include a server **804**, a client terminal **806**, and a communication network **802**. The server **804** and the client terminal **806** may be coupled through the communication network **802** for information exchange, such as social network services (SNS) and other internet portals and online communities. Although only one client terminal **806** and one server **804** is shown in the

environment **800**, any number of client terminals **806** or servers **804** may be included, and other devices may also be included.

Communication network **802** may include any appropriate type of communication network for providing network connections to the server **804** and client terminal **806** or among multiple servers **804** or client terminals **806**. For example, communication network **802** may include the Internet or other types of computer networks or telecommunication networks, either wired or wireless.

A client terminal, as used herein, may refer to any appropriate user terminal with certain computing capabilities, such as a personal computer (PC), a work station computer, a server computer, a hand-held computing device (tablet), a smart phone or mobile phone, or any other user-side computing device.

A server, as used herein, may refer one or more server computers configured to provide certain server functionalities related to providing SNS, such as database management, SNS data management, and other data access and management functions. A server may also include one or more processors to execute computer programs in parallel.

Server **804** and/or client terminal **806** may be implemented on any appropriate type of computing platform. FIG. **7** shows a block diagram of an exemplary computing system **900** that may be used to implement server **804** and/or client terminal **806**.

As shown in FIG. **9**, computing system **900** may include a processor **902**, a storage medium **904**, a monitor **906**, a communication module **908**, a database **910**, peripherals **912**, and one or more bus **914** to couple the devices together. Certain devices may be omitted and other devices may be included.

Processor **902** may include any appropriate processor or processors. Further, processor **902** can include multiple cores for multi-thread or parallel processing. Storage medium **904** may include memory modules, such as ROM, RAM, and flash memory modules, and mass storages, such as CD-ROM, U-disk, removable hard disk, etc. Storage medium **904** may store computer programs for implementing various processes, when executed by processor **902**.

Further, peripherals **912** may include I/O devices such as keyboard and mouse, and communication module **908** may include network devices for establishing connections through the communication network **802**. Database **910** may include one or more databases for storing certain data and for performing certain operations on the stored data, such as database searching.

In operation, a user at client terminal **806** may access an SNS network provided and/or managed by server **804** to perform certain information management actions, such as synchronizing information in address books on client terminal **806** and information in address books on the SNS network or server **804**. FIG. **1** illustrates an exemplary address book synchronization process consistent with the disclosed embodiments.

A user on the client terminal **806** may have an address book located on client terminal **806**, i.e., a terminal address book, for storing information of persons the user have contact with. The user may also have an address book located on the SNS network on server **804**, i.e., an SNS network address book, for storing all information of persons the user has a relationship related to the SNS network. The user may request client terminal **806** and/or server **804** to synchronize the information stored in the different address books.

To synchronize between the terminal address book and the SNS network address book, a synchronization target (an address book to which information is synchronized) may be determined. For example, the user may input a desired synchronization target. Alternatively, client terminal **806** and/or server **804** may automatically determine which one of the terminal address book and the SNS network address book is the synchronization target.

As shown in FIG. **1**, after receiving a request from the user, client terminal **806** and/or server **804** may match contact information in the terminal address book with contact information in the SNS network address book to identify a contact person with the same contact information in the terminal address book and in the SNS network address book (**100**).

The contact information is a part of the information about a contact person stored in the terminal address book and in the SNS network address book. The contact information may be used to represent or identify the contact person and may include any appropriate information entry in an address book. In certain embodiments, the contact information may include a mobile phone number and/or an email address. Other unique identification information of a contact person used in the address book may also be used. The mobile phone number or email address is generally more effective as an identifier of a contact person than other information in the address book. Matching the mobile phone number and/or email address may produce desired matching result.

Further, after a contact person with matching contact information is identified (**100**), the information of this contact person in the terminal address book is synchronized with the information of the same contact person in the SNS address book (**101**). That is, by matching a specific type or types of information (i.e., contact information) in the terminal address book with the specific type or types of information in the SNS network address book, all information of the contact person with matching contact information separately stored on the client terminal **806** and on the SNS network can be synchronized. Thus, the address book on the SNS network and the address book on the client terminal **806** can be interoperable and these address books can also be managed in one-stop fashion. Thus, the user can manage address book information with improved efficiency.

To provide these functionalities, certain synchronization systems may be implemented on both client terminal **806** and server **804** via software, hardware, or a combination of software and hardware. FIG. **4** illustrates an exemplary terminal synchronization system **400** implemented on client terminal **806** consistent with the disclosed embodiments.

As shown in FIG. **4**, the terminal synchronization system **400** includes a storing module **10**, a matching module **11**, an identifying module **12**, and a synchronizing module **13**. Other modules may also be included.

Storing module **10** may be configured to store an address book on client terminal **806** (i.e., a terminal address book) and also to store associated entries of information in the address book. One or more entries of information may be designated as contact information. Matching module **11** is configured to match the contact information in the terminal address book with contact information in the SNS network address book. Identifying module **12** is configured to identify a contact person having same contact information in the terminal address book based on the matching results from the matching module **11**. Identification module **12** may identify all contact persons having matching contact information in the terminal address book.

Further, synchronization module **13** is configured to, after the identifying module **12** identifies the contact person having the same certain contact information, synchronize information of the contact person stored in the terminal address book with all the information of the contact person stored in the

SNS network address book. More specifically, the synchronization module **13** synchronizes the information of the contact person in the SNS network address book to the information of the contact person in the terminal address book as a new addition. That is, the information of the contact person stored in the SNS network address book is added to the information of the contact person stored in the terminal address book.

After adding all information of the identified contact persons to the terminal address book, synchronization module **13** may obtain the information of remaining contact persons in the SNS network address book. The remaining contact persons in the SNS network address book are those contact persons filtered out in the above identification process, i.e., the contact persons having different contact information from the contact persons in the terminal address book. For the remaining contact persons in the SNS network address book without any matching contact information but with a mobile phone number or an email address, a list of those contact persons together with their information may be displayed to the user. And the user may be prompted to add any of the listed contact persons as a new contact to the terminal address book. The user may also be prompted to download the information of the newly added person from the SNS network to the terminal address book.

The information of a contact person may include one or more of name, picture, mobile phone number, email address, telephone number, friend's personal home page Uniform Resource Locator (URL), residence address, company name, birthday, job title, and Instant Messaging (IM) information. As previously described, the information in the SNS network address book may include various types of information. For example, the information may include contact information, such as one or more mobile phone number, email address, and telephone number, and other information, such as birthday and residence address. The mobile phone number or email address is generally a more effective identifier of a contact person than other information in the address book. Matching the mobile phone number or email address may produce desired matching result.

FIG. **5** illustrates another exemplary terminal synchronization system **500** implemented on client terminal **806** consistent with the disclosed embodiments. As shown in FIG. **5**, the terminal synchronization system **500** includes storing module **10**, matching module **11**, identifying module **12**, synchronizing module **13**, processing module **14**, downloading module **15**, maintaining module **16**, and pushing module **17**. Certain modules may be omitted and other modules may also be included.

Because storing module **10**, matching module **11**, identifying module **12**, and synchronizing module **13** are described with respect to FIG. **4** above, detailed descriptions are omitted herein. Further, processing module **14** is configured to process contact information downloaded from the SNS network address book such that the contact information is represented in a specific format. Downloading module **15** is configured to download contact information in the SNS network address to the client terminal **806** and/or to download information in the SNS network address book to the client terminal **806**.

More specifically, when the user initiates a synchronization operation to synchronize the terminal address book and the SNS network address book or to synchronize the information of a contact person in the SNS network address book to the terminal address book, a client-side program may cause the SNS network (e.g., server **804**) to call certain system interfaces to read the contact information in the user's SNS network address book. The processing module **14** may then download the contact information, such as mobile phone number and email address, to the client terminal **806** via the downloading module **15**. After receiving the contact information, the processing module **14** may standardize the format of the contact information, which may be in different formats. The format of the contact information may be standardized such that the matching module **11** can match the standardized contact information with the contact information in the terminal address book. The standardized format may be a format recognized by the client terminal **806** or by a format specified by an SNS network operator.

As described above, the matching module **11** may match the downloaded and standardized contact information with contact information in the terminal address book and, based on the matching results, the identifying module **12** identifies the contact person with matching contact information. The identifying module **12** may identify all contact persons having matching contact information in the terminal address book. The synchronizing module **13** adds the information of the identified contact person in the SNS network address book to the information of the contact person in the terminal address book. After adding all information of the identified contact persons to the terminal address book, synchronization module **13** may obtain the information of the remaining contact persons in the SNS network address book and may prompt the user with a list of those remaining contact persons together with their information. The user may be prompted to add any of the listed contact persons as a new contact to the terminal address book. The user may also be prompted to download the information of the newly added person from the SNS network to the terminal address book.

The maintaining module **16** is configured to maintain the terminal address book. For example, the maintaining module **16** may be configured to perform certain maintenance actions when receiving instructions from the user. When receiving a user instruction for a modification operation, the maintaining module **16** modifies the newly added (or synchronized) information of the contact person and stores the modified information in the terminal address book. When receiving a user instruction for a deletion operation, the maintaining module **16** deletes the newly added information that is not modified from the terminal address book, while keeping the original information of the contact person or the newly added but modified information in the terminal address book. Further, the pushing module **17** is configured to, when the information of the contact person is changed in the terminal address book, push the changes of the information of the contact person to the SNS network address book.

FIG. **6** illustrates an exemplary SNS network synchronization system **600** implemented on server **804** consistent with the disclosed embodiments. As shown in FIG. **6**, the SNS network synchronization system **600** includes a storing module **20**, a matching module **21**, an identifying module **22**, and a synchronizing module **23**. Other modules may also be included.

Storing module **20** may be configured to store an address book on server **804** (i.e., an SNS network address book) and also to store associated entries of information in the SNS network address book. Matching module **21** is configured to match the contact information in the SNS network address book with contact information in the terminal address book.

Identifying module **22** is configured to identify a contact person having same contact information in the SNS network address book based on the matching results from the matching module **21**.

Further, synchronization module **23** is configured to, after the identifying module **22** identifies the contact person having

the same contact information, synchronize all information of the contact person stored in the SNS network address book with the information of the contact person stored in the terminal address book. More specifically, the synchronization module **23** synchronizes the information of the contact person in the terminal address book to the information of the contact person in the SNS network address book as a new addition. That is, all the information of the contact person stored in the terminal address book is added to the information of the contact person stored in the SNS network address book.

After adding information of all contact persons having matching contact information in the SNS network address book, synchronization module **23** may obtain the information of the remaining contact persons in the terminal address book and may prompt the user with a list of those contact persons together with their information. The user may be prompted to add any of the listed contact persons as a new contact to the SNS network address book. The user may also be prompted to upload the information of the newly added person from the terminal to the SNS network address book.

FIG. **7** illustrates another exemplary SNS network synchronization system **700** implemented on server **804** consistent with the disclosed embodiments. As shown in FIG. **7**, the SNS network synchronization system **700** includes storing module **20**, matching module **21**, identifying module **22**, synchronizing module **23**, processing module **24**, obtaining module **25**, maintaining module **26**, and pushing module **27**. Certain modules may be omitted and other modules may also be included.

Because storing module **20**, matching module **21**, identifying module **22**, and synchronizing module **23** are described with respect to FIG. **6** above, detailed descriptions are omitted herein. Further, processing module **24** is configured to process contact information obtained from the terminal address book such that the contact information is represented in a specific format. Obtaining module **25** is configured to obtain contact information from the client terminal **806** to server **804** and also to obtain other information in the terminal address book from the client terminal **806**.

More specifically, when synchronizing the information of a contact person in the terminal address book to the SNS network address book, the processing module **24** may call certain system interfaces to read the contact information in the user's terminal address book. The synchronization may be initiated by the user or may be initiated by the server **804** automatically upon certain conditions. The processing module **24** may obtain the contact information, such as mobile phone number and/or email address, and send the contact information to the SNS network (e.g., server **804**). Further, the processing module **24** may standardize the format of the contact information, which may be in different formats, such that the matching module **21** can match the standardized contact information with the contact information in the SNS network address book. The standardized format may be a format recognized by the server **804** or by a format specified by an SNS network operator.

As described above, the matching module **21** may match the obtained and standardized contact information with contact information in the SNS network address book and, based on the matching results, the identifying module **22** identifies the contact person with matching contact information. The synchronizing module **23** then adds the information of the contact person in the terminal address book to the information of the contact person in the SNS network address book.

After adding information of all identified contact persons having matching contact information in the SNS network address book, synchronization module **23** may obtain the information of the remaining contact persons in the terminal address book and may prompt the user with a list of those contact persons together with their information. The user may be prompted to add any of the listed contact persons as a new contact to the SNS network address book. The user may also be prompted to upload the information of the newly added person from the terminal to the SNS network address book

The maintaining module **26** is configured to maintain the SNS network address book. For example, the maintaining module **26** may be configured to perform certain maintenance actions when receiving instructions from the user. When receiving a user instruction for a modification operation, the maintaining module **26** modifies the newly added (or synchronized) information of the contact person and stores the modified information in the SNS network address book. When receiving a user instruction for a deletion operation, the maintaining module **26** deletes the new added information that is not modified from the SNS network, while keeping the original information of the contact person or the newly added but modified information on the SNS network address book. Further, the pushing module **27** is configured to, when the information of the contact person is changed in the SNS network address book, push the changes on the information of the contact person in the SNS network address book to the terminal address book.

In operation, both client terminal **806** (e.g., terminal synchronization system **400**, terminal synchronization system **500**) and server **804** (e.g., SNS network synchronization system **600**, SNS network synchronization system **700**) may perform various processes to synchronize and manage the terminal address book and the SNS network address book. FIG. **2** illustrates an exemplary synchronization process performed by client terminal **806**.

As shown in FIG. **2**, client terminal **806** (e.g., downloading module **15**) may download contact information from the SNS network address book, and then may convert the downloaded contact information into a standardized format on client terminal **806** (e.g., processing module **14**) (**200**). The downloading of the contact information may be started by a user of client terminal **806** or by client terminal **806** automatically or periodically. In other words, the synchronization process may be initiated by a user or automatically by the client terminal **806**. For example, the client terminal **806** may provide the user with an interface to manage address books on client terminal **806** and on server **804**, and the user may choose to synchronize the terminal address book with the SNS network address book.

The processing module **14** may access the SNS network using certain system interface to read contact information in the user's SNS network address book, and may also download the contact information to client terminal **806** via downloading module **15**. Since the contact information such as mobile phone numbers may be in different formats, the processing module **14** may then convert the different format contact information in a standardized format, as shown in Table 1 below.

TABLE 1

Standardized format and processing rules

Phone Number Type	Processing Rules
11 digits, 11000000000 && <190000000000	Directly read the 11 digit phone number
+86 (11-digit mobile phone number)	Remove +86 and read the 11-digit phone number

TABLE 1-continued

Standardized format and processing rules

Phone Number Type	Processing Rules
17951 +1 +10 digits, "\"179511\d{10}\"", 17951 + mobile phone number	Remove 17951, read the 11-digit phone number
17951 +0 +10 digits, "\"179510\d{10}\"", 17951 + area code + fixed telephone number	No processing
3 digits - 4 digits - 4 digits, "\"\d{3}-\d{4}-\d{4}\"", or 1-d{3}-d{3}-d{4}, mobile phone number	Remove the "-", read the 11-digit phone number
8 digit number beginning with 5/6/9	Directly read the 8-digit number
852 (8 digit number beginning with 5/6/9)	Remove the 852, read the 8-digit phone number

Further, the client terminal **806** may also download information of contact person(s) in the SNS network address book to the client terminal **806** (**201**). The information may be downloaded in a data packet or message, which may include a plurality of fields. For example, Table 2 below shows various information fields used for synchronization operations and the suggested operations on these fields.

TABLE 2

Information field for synchronization operation

Name of the information field	Notes on the suggested operation
Name	Synchronization: add the name as a name remark; New addition: add the name as a new entry of the person's name
Picture	Based on user setting to determine whether to sync
Mobile phone number	Standardize the mobile phone number
Email address	Recognize various types of email addresses
Fixed phone number	
Friend's personal home page	Extract the URL of the friend's personal home page, and add to the home page field of the local address book
Current address	
Company	Read the most recent company information
Job title	Read the job title information listed under the most recent company
Birthday	
IM information	Read information from Instant Messenger such as QQ and MSN, and add to the IM field of the address book

Further, client terminal **806** (e.g., matching module **11**, identifying module **12**) may match the contact information in the terminal address book and the contact information in the SNS network address book, and identify a contact person with the same contact information (**202**). For example, the mobile phone numbers in the terminal address book may be matched against mobile phone numbers in the SNS network address book, and a contact person with the same mobile phone number in both address books may be identified as the contact person for synchronization. Or the email addresses in the terminal address book may be matched against the email addresses in the SNS network address book, and a contact person with the same email address in both address books may be identified as the contact person for synchronization. All contact persons having matching contact information in both address books may be identified.

After the contact person is identified, the client terminal **806** (e.g., synchronizing module **13**) may synchronize the information of the contact person in the SNS network address book to the information of the contact person in the terminal address book, in the form of new addition (**203**). For example, the information of the contact person may include one or more of name, picture, mobile phone number, email address, landline number, URL of friend's personal home page, current residential address, company name, birthday, job title, and IM information, etc. Information of all identified contact persons may be synchronized.

After adding information of all contact persons having matching contact information in the terminal address book, client terminal **806** may obtain the information of the remaining contact persons in the SNS network address book and may prompt the user with a list of those contact persons together with their information. The user may be prompted to add any of the listed contact persons as a new contact to the terminal address book and to download the information of the newly added person from the SNS network to the terminal address book.

Alternatively, instead of downloading the information of contact person(s) in the SNS network address book in **201**, the information of the contact person may be downloaded after the contact person is identified and only the information of the identified contact person may be downloaded.

In addition, the client terminal **806** (e.g., maintaining module **16**) may receive a user instruction for modification, and may accordingly modify the newly added (or synchronized) information of the contact person and store the modified information in the terminal address book (**204**). The client terminal **806** (e.g., maintaining module **16**) may also receive a user instruction for deletion, and may accordingly delete the newly added but unmodified information of the contact person while keep the original information of the contact person or the newly added but modified information of the contact person (**205**).

That is, after the synchronization is completed, the results of the synchronization may be prompted to the user, and the user may decide whether to modify and keep the newly added or synchronized information in the terminal address book. If the user wants to modify an entry of information, the user may issue a modification instruction; and if the user wants to delete an entry of information, the user may issue a deletion instruction.

Further, when the information of the contact person is changed in the terminal address book, the client terminal **806** (e.g., pushing module **17**) may push the changes on the information of the contact person to the SNS network address book.

As described above, the user may manage the terminal address book on client terminal **806** to synchronize or interoperate with the SNS network address book. The user may also manage the SNS network address book on server **804** to synchronize or interoperate with the terminal address book. FIG. **3** illustrates an exemplary synchronization process performed by server **804**.

As shown in FIG. **3**, server **804** (e.g., through obtaining module **25**) may obtain contact information from the terminal address book, and convert the obtained contact information into a standardized format (e.g., through processing module **24**) (**300**). Obtaining or standardization of the contact information may be started remotely by a user of client terminal **806**. Alternatively, the obtaining or the standardization operation may be started automatically or periodically by client terminal **806** or by server **804**. In other words, the synchronization process from the SNS network side may be initiated by a user or automatically by server **804** or client terminal **806**.

The processing module **24** of server **804** may access the SNS network using certain system interfaces to read contact information from the terminal address book, and the contact information may be sent to the server **804** by the client terminal **806**. After the contact information is obtained, the server **804** (e.g., processing module **24**) may convert different format contact information into a standardized format, as previously shown in Table 1.

Further, the server **804** may also obtain other information of contact person(s) in the terminal address book from the client terminal **806** (**301**). The information may be uploaded to the SNS network in a data packet or message, which may include a plurality of fields as previously shown in Table 2.

The server **804** (e.g., matching module **21**, identifying module **22**) may match the contact information in the SNS network address book against the contact information in the terminal address book, and identify a contact person with the same contact information in both address books(**302**). For example, the mobile phone numbers in the SNS network address book may be matched against the mobile phone numbers in the terminal address book, and a contact person with the same mobile phone number in both address books may be identified as the contact person for synchronization operation. For another example, the email addresses in the SNS network address book may be matched against the email addresses in the terminal address book, and a contact person with the same email address in both address books may be identified as the contact person for synchronization. All contact persons having matching contact information in both address books may be identified.

After the contact person is identified, the server **804** (e.g., synchronizing module **23**) may synchronize the information of the contact person in the terminal address book to the information of the contact person in the SNS network address book, in the form of new addition (**303**). As previously described, the information of the contact person may include one or more of name, picture, mobile phone number, email address, fixed phone number, friend's personal home page URL, residential address, company name, birthday, job title, and IM information, etc. Other information may also be used. Information of all identified contact persons may be synchronized.

After adding information of all contact persons having matching contact information in the SNS network address book, the server **804** may obtain the information of the remaining contact persons in the terminal address book and may prompt the user with a list of those contact persons together with their information. The user may be prompted to add any of the listed contact persons as a new contact to the SNS network address book and to upload the information of the newly added person from the terminal to the SNS network address book.

Alternatively, instead of uploading the information of contact person(s) from the terminal address book to the SNS network address book in **301**, the information of the contact person may be uploaded after the contact person is identified and only the information of the identified contact person may be uploaded from the terminal address book.

In addition, the server **804** (e.g., maintaining module **26**) may receive a user instruction for modification, and may accordingly modify the newly added (or synchronized) information of the contact person and store the modified information in the SNS network address book (**304**). The server **804** (e.g., maintaining module **26**) may also receive a user instruction for deletion, and may accordingly delete the newly added but unmodified information of the contact person in the SNS network address book yet keep the original information of the contact person in the SNS network address book or the newly added but modified information (**305**).

That is, after the synchronization is completed, the results of the synchronization may be sent to the user, and the user may access the SNS network to decide whether to modify and keep the newly added or synchronized information in the SNS network address book. If the user wants to modify an entry of information, the user may issue a modification instruction; and if the user wants to delete an entry of information in the SNS network address book, the user may issue a deletion instruction.

Further, when the information of the contact person is changed in the SNS network address book, the server **804** (e.g., pushing module **27**) may push the changes on the information of the contact person to the terminal address book.

Industrial Applicability and Advantageous Effects

Without limiting the scope of any claim and/or the specification, examples of industrial applicability and certain advantageous effects of the disclosed embodiments are listed for illustrative purposes. Various alternations, modifications, or equivalents to the technical solutions of the disclosed embodiments can be obvious to those skilled in the art.

The disclosed methods and systems can be used in a variety of internet applications, especially in social network services (SNS) applications. By using the disclosed methods and systems, a specific type or types of information (i.e., contact information) in the terminal address book and in the SNS network address book is matched to find any contact person with matching contact information. Information of the contact person in both address books can then be synchronized based on the matching result. Thus, the address book on the SNS network and the address book on the user terminal can be integrated and interoperable. Moreover, both address books can be managed in one-stop fashion. Thus, the user can manage the address book information with an improved efficiency.

What is claimed is:

1. A method for synchronizing between a first address book on a user terminal and a second address book on a social network service (SNS) network maintained by an SNS server containing at least a processor, comprising:

determining, by the user terminal containing at least a processor, a synchronization target;

when the synchronization target is determined as the first address book, downloading contact information from the second address book to the user terminal;

when the synchronization target is determined as the SNS network address book, uploading, by the user terminal, contact information from the first address book to the SNS network;

matching, by one of the user terminal and the SNS server, contact information in the first address book against contact information in the second address book;

identifying, by one of the user terminal and the SNS server, based on the matching, a contact person having same contact information in the first address book and the second address book; and

after the contact person is identified, synchronizing, by one of the user terminal and the SNS server, information of the contact person in the first address book and information of the contact person in the second address book;

wherein before matching contact information in the first address book against contact information in the second address book, and when the contact information

includes a phone number, the phone number is standardized according to one or more processing rules, including:

setting a predefined number of digits n for standardized mobile phone numbers;

if the phone number has n digits, directly reading the phone number as a standardized mobile phone number;

if the phone number includes more than n digits, reading the last n digits as a standardized mobile phone number; and

if the phone number includes at least one of parenthesis and dashes, removing the parenthesis and dashes, and only reading the n digits as a standardized mobile phone number

wherein the synchronizing further includes:

if the synchronization target is the SNS network address book, synchronizing the information of the contact person in the terminal address book to the information of the contact person in the SNS network address book as a new addition; and

if the synchronization target is the terminal address book, synchronizing the information of the contact person in the SNS network address book to the information of the contact person in the terminal address book as a new addition;

wherein when the synchronization target is the SNS network address book,

after receiving a user instruction for modification, modifying newly added information of the contact person, and storing the modified information in the SNS network address book; and

after receiving a user instruction for deletion, deleting newly added information that is not modified from the SNS network address book, and keeping original information of the contact person in the SNS network address book or newly added but modified information in the SNS network address book; and

wherein when the synchronization target is the terminal address book,

after receiving a user instruction for modification, modifying newly added information of the contact person, and storing the modified information in the terminal address book; and

after receiving a user instruction for deletion, deleting newly added information that is not modified from the terminal address book, and keeping original information of the contact person in the terminal address book or newly added but modified information in the terminal address book.

2. The method according to claim **1**, wherein:

when the synchronization target is the SNS network address book,

if the information of the contact person is changed in the SNS network address book, pushing changes on the information of the contact person in the SNS network address book to the terminal address book, and

when the synchronization target is the terminal address book,

if the information of the contact person is changed in the terminal address book, pushing changes on the information of the contact person in the terminal address book to the SNS network address book.

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